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FARMERS' BULLETINS

- 447F. Bees.
- 450F. Some facts about malaria.
- 627F. The house centipede.
- 658F. Cockroaches.
- 662F. The apple-tree tent caterpillar.
- 675F. The roundheaded apple-tree borer.
- 695F. Outdoor wintering of bees.
- 701F. The bagworm, an injurious shade-tree insect.
- 705F. The catalpa sphinx.
- 708F. The leopard moth: A dangerous imported enemy of shade trees.
- 722F. The leaf blister mite of pear and apple.
- 723F. The oyster-shell scale and the scurfy scale.
- 725F. Wireworms destructive to cereal and forage crops.
- 731F. The true army worm and its control.
- 734F. Flytraps and their operation.
- 739F. Cutworms and their control in corn and other cereal crops.
- 740F. House ants: Kinds and methods of control.
- 747F. Grasshoppers and their control with relation to cereal and forage crops.
- 752F. The fall army worm or "grass worm" and its control.
- 754F. The bedbug.
- 762F. The false chinch bug and measures for controlling it.
- 763F. Orchard barkbeetles and pinhole borers and how to control them.
- 799F. Carbon disulphid as an insecticide.
- 801F. Mites and lice on poultry.
- 831F. The red spider on cotton and how to control it.
- 835F. How to detect outbreaks of insects and save the grain crops.
- 846F. The tobacco beetle and how to prevent damage by it.
- 857F. Screw worms and other maggots affecting animals.
- 860F. Cranberry insect problems and suggestions for solving them.
- 875F. The rough-headed corn stalk-beetle in the Southern States and its control.
- 880F. Fumigation of ornamental greenhouse plants with hydrocyanic-acid gas.
- 891F. The corn root-aphis and methods of controlling it.
- 897F. Fleas and their control.



- 908F. Information for fruit growers about insecticides, spraying apparatus, and important insect pests.
- 933F. Spraying for the control of insects and mites attacking citrus trees in Florida.
- 940F. Common white grubs.
- 944F. Controlling the garden webworm in alfalfa fields.
- 950F. The southern corn rootworm and farm practices to control it.
- 959F. The spotted garden slug.
- 961F. Transferring bees to modern hives.
- 971F. The control of the clover-flower midge.
- 975F. The control of European foulbrood.
- 982F. Control of the green clover worm in alfalfa fields.
- 1003F. How to control billbugs destructive to cereal and forage crops.
- 1006F. The jointworm and its control.
- 1012F. Preparation of bees for outdoor wintering.
- 1014F. Wintering bees in cellars.
- 1025F. The larger corn stalk-borer.
- 1029F. Conserving corn from weevils in the Gulf Coast States.
- 1039F. Commercial comb-honey production.
- 1061F. The harlequin cabbage bug and its control.
- 1065F. The flatheaded apple-tree borer.
- 1070F. The fowl tick and how premises may be freed from it.
- 1076F. The California oakworm.
- 1094F. The alfalfa caterpillar.
- 1097F. The stable fly: How to prevent its annoyance and its losses to live stock.
- 1101F. The Argentine ant as a household pest.
- 1104F. Book-lice or psocids: Annoying household pests.
- 1128F. Control of aphids injurious to orchard fruits, currant, gooseberry, and grape.
- 1156F. Angoumois grain moth.
- 1169F. Insects injurious to deciduous shade trees and their control.
- 1198F. Swarm control.
- 1206F. The corn earworm as an enemy of vetch.
- 1215F. Beekeeping in the clover region.
- 1216F. Beekeeping in the buckwheat region.
- 1217F. The green-bug or spring grain-aphis: How to prevent its periodical outbreaks.
- 1220F. Insect and fungous enemies of the grape.
- 1222F. Beekeeping in the tulip-tree region.
- 1246F. The peach borer.
- 1252F. Sawflies injurious to rose foliage.
- 1257F. Insects injurious to the mango in Florida and how to combat them.
- 1258F. Webworms injurious to cereal and forage crops and their control.
- 1259F. A sawfly injurious to young pines.
- 1260F. Stored grain pests.
- 1261F. The avocado: Its insect enemies and how to combat them.
- 1270F. The more important apple insects.
- 1275F. Weevils in beans and peas.
- 1285F. Lime-sulphur concentrate: Preparation, uses, and designs for plants.
- 1286F. The red-necked raspberry cane-borer.
- 1306F. Insect enemies of chrysanthemums.
- 1309F. Control of the common mealybug on citrus in California.



- 1321F. Fumigation of citrus trees for control of insect pests.
- 1323F. The wheat strawworm and its control.
- 1326F. Control of the codling moth in the Pacific Northwest.
- 1329F. The boll weevil problem.
- 1344F. The strawberry rootworm as an enemy of the greenhouse rose.
- 1346F. Carpet beetles and their control.
- 1352F. The tobacco flea-beetle in the southern cigar-wrapper district.
- 1353F. Clothes moths and their control.
- 1354F. The yellow-fever mosquito.
- 1362F. Insects injurious to ornamental greenhouse plants and their control.
- 1371F. Diseases and insects of garden vegetables.
- 1408F. The house fly and how to suppress it.
- 1425F. The tobacco flea-beetle in the dark fire-cured tobacco district of Kentucky and Tennessee.
- 1461F. The common cabbage worm and its control.
- 1462F. The potato leafhopper and how to control it.
- 1472F. Preventing damage by termites or white ants.
- 1477F. Preventing damage by *Lyctus* powder-post beetles.
- 1483F. Control of insect pests in stored grain.
- 1484F. The clover leaf weevil and its control.
- 1489F. The green June beetle larvae in tobacco plant beds.
- 1494F. Tobacco cutworms and their control.
- 1495F. Insect enemies of the flower garden.
- 1498F. The chinch bug and how to fight it.
- 1499F. The melon aphid and its control.
- 1503F. The horse bots and their control.
- 1528F. The control of the alfalfa weevil.
- 1531F. The tobacco budworm and its control in the Georgia and Florida tobacco-growing region.
- 1543F. Insects injurious to the rice crop.
- 1548F. The European corn borer: Its present status and methods of control.
- 1557F. Insects attacking the peach in the South and how to control them.
- 1561F. The Porto Rican mole cricket.
- 1566F. The sorghum midge with suggestions for control.
- 1569F. Earthworms as pests and otherwise.
- 1570F. Mosquito remedies and preventives.
- 1582F. Protection of log cabins and rustic work from injurious insects.
- 1586F. The southern pine beetle: A serious enemy of pines in the South.
- 1595F. The bollworm or corn ear worm as a cotton pest.
- 1596F. Cattle grubs or heel flies with suggestions for their control.
- 1601F. Collection and preservation of insects for use in the study of agriculture.
- 1623F. The gypsy moth and the brown-tail moth.
- 1624F. The Mexican bean beetle in the East and its control.
- 1627F. The Hessian fly and how losses from it can be avoided.
- 1642F. Chalcid control in alfalfa-seed production. (In press.)
- 1651F. The corn earworm as an enemy of field corn in the Eastern States.
- 1654F. Insects of the pecan and how to control them.
- 1655F. The control of moths in upholstered furniture.
- 1657F. The Great Basin wireworm in the Pacific Northwest.
- 1665F. The silverfish as a pest of the household. (In press.)



## LEAFLETS

- 2L. Cutworms in the garden.
- 12L. The striped blister beetle on soybeans.
- 31L. Termites in buildings.
- 37L. Poisoning the cotton boll weevil.
- 53L. Cotton-louse control.

## ENTOMOLOGY LEAFLET

E-127. Chinch bug.

## POSTERS

- E-149. Destroy grasshoppers with poison-bran bait.
- E-155. Spray potato fields.
- E-177. The Hessian fly.
- E-178. Wheat jointworm.
- E-179. The alfalfa seed chalcis-fly.
- J63843. Help fight the European corn borer.

## YEARBOOK SEPARATES

(Those marked with an asterisk are obtainable from the Bureau of Entomology only)

- \*653Y. Edible snails.
- \*786Y. How weevils get into beans.

## DEPARTMENT CIRCULARS

(The publications in this series are semipopular in character. Those marked by an asterisk are obtainable from the Bureau of Entomology only.)

- 172C. The range crane-flies in California.
- \*224C. Nicotine dust for control of the striped cucumber beetle.
- 263C. Preliminary report on the control of the San Jose Scale with lubricating oil emulsion.
- \*282C. The Australian tomato weevil introduced in the South. A preliminary account.
- \*284C. The sterilization of American foulbrood combs.
- 287C. The occurrence of diseases of adult bees, II.
- 294C. The rat mite attacking man.
- 361C. The cotton hopper or so-called cotton flea.
- 363C. The Japanese beetle.
- 367C. Airplane dusting in the control of malaria mosquitoes.
- 380C. Calcium cyanide as a fumigant for ornamental greenhouse plants.
- 395C. The oriental peach moth.



## CIRCULARS

(This series supersedes the Department Circular series)

7. An apparatus for the rapid vaporization of carbon disulphide.
14. Status of imported parasites of the European corn borer.
18. Experimental dissemination of the tabanid egg parasite *Phanurus emersoni* Girault and biological notes on the species.
24. United States grades, color standards, and packing requirements for honey.
27. Some mushroom diseases and their carriers.
45. The application of sodium fluosilicate by airplane in an attempt to control the sugar-cane moth borer.
51. The chinch bug in relation to St. Augustine grass.
71. Heat and time of exposure necessary to kill larvae of the European corn borer in ear corn.
75. The true cricket -- A serious cotton pest in California.
106. Tree hoppers and their control in the orchards of the Pacific Northwest.
109. Parasitism of the Mediterranean fruit fly in Hawaii 1922-1924.
117. The Asiatic beetle, a serious pest in lawns.
123. A comparative study of dusting by means of airplane and ground machine for the control of the blueberry maggot.
130. Traps for the Japanese beetle.
132. Fighting the corn borer with machinery in the two-generation area.
145. *Tiphia popilliavora* Rohwer, a parasite of the Japanese beetle.
157. Fig insects in California. (In press.)
165. Plowing as a control measure for the European corn borer in western New York. (In press.)

## MISCELLANEOUS CIRCULARS

- 46M. A bibliography of the European corn borer (*Pyrausta nubilalis* Hon.)
- 70M. Timely information about the European corn borer.
- 102M. Pertinent information regarding the 1927 spring clean-up of areas quarantined on account of the European corn borer.
- 104M. Spread and infestation by the European corn borer during 1926.

## MISCELLANEOUS PUBLICATIONS

35. Cotton or weevils.
74. An annotated list of the important North American forest insects.
83. Directory of field activities of the Bureau of Entomology.

## DEPARTMENT BULLETINS

(Most of the publications in this series are professional papers intended for the use of entomologists or other technical workers. Those marked by an asterisk are obtainable from the Bureau of Entomology only.)

- \*59D. The tobacco splitworm.
- \*100D. Walnut aphides in California.
- \*111D. The Sequoia pitch moth: A menace to pine in western Montana.
- \*113D. The lesser bud-moth.
- 124D. The alfalfa caterpillar.
- \*131D. Repellents for protecting animals from the attacks of flies.
- \*170D. The European pine-shoot moth.



- \*173D. The life history and habits of the pear thrips in California.
- \*184D. The huisache girdler.
- \*295D. The Zimmerman pine moth.
- \*443D. The New Mexico range caterpillar and its control.
- \*491D. The melon fly in Hawaii.
- \*550D. Control of the grape-berry moth in the Erie Chautauqua grape belt.
- \*564D. Collection of weevils and infested squares as a means of control of the cotton-boll weevil in the Mississippi delta.
- 640D. The Mediterranean fruit fly.
- \*967D. Results of work on blister beetles in Kansas.
- 1016D. Bionomics of the chinch bug.
- \*1032D. The blackhead fireworm of cranberry on the Pacific Coast.
- 1076D. Biology of the lotus borer (*Pyrausta penitalis* Grote).
- 1107D. The lead-cable borer or "short-circuit beetle" in California.
- 1115D. Chemical changes in calcium arsenate during storage.
- 1147D. Chemical, physical, and insecticidal properties of arsenicals.
- 1149D. Absorption and retention of hydrocyanic acid by fumigated food products.
- 1204D. Dusting cotton from airplanes.
- 1217D. Mixing emulsified mineral lubricating oils with deep-well waters and lime-sulphur solutions.
- 1231D. Tests of methods of protecting woods against termites or white ants.
- \*1243D. Studies of the Mexican bean beetle in the Southeast.
- \*1267D. The rough-headed corn stalk-beetle.
- 1307D. Absorption and retention of hydrocyanic acid by fumigated food products. Part II.
- \*1324D. The oviposition response of insects.
- 1363D. Host relations of *Compsilura concinnata* Meigen, an important tachinid parasite of the gipsy moth and the brown-tail moth.
- 1369D. The cattle grubs or ox warbles, their biologies and suggestions for control.
- \*1371D. Effectiveness against the San Jose Scale of the dry substitutes for liquid lime-sulphur.
- 1374D. Studies of the pink bollworm in Mexico.
- 1397D. The pink bollworm with special reference to steps taken by the Department of Agriculture to prevent its establishment in the United States.
- 1426D. The clover root-borer.
- 1428D. The cadelle.
- 1429D. The parasites of *Popillia japonica* in Japan and Korea, and their introduction in the United States.
- 1453D. The cheese skipper as a pest in cured meats.
- 1469D. The satin moth, a recently introduced injurious pest.
- 1472D. Chemotropic tests with the screw-worm fly.
- 1476D. A progress report on the investigations of the European corn borer.
- \*1482D. Experiments on the control of the plum curculio, brown-rot, and scab, attacking the peach in Georgia.
- \*1487D. A study in hyperparasitism, with particular reference to the parasites of *Apanteles melanoscelus* (Ratz.).
- 1490D. Defects in timber caused by insects.



## TECHNICAL BULLETINS

(This series supersedes the Department Bulletin series.)

- 3T. The relation of highway slash to infestations by the western pine beetle in standing timber.
- 4T. *Lygus elisus*: A pest of the cotton regions in Arizona and California.
- 20T. A study of *Phylloxera* infestation in California as related to types of soils.
- 25T. Control experiments against the European red mite and other fruit-tree mites.
- 31T. The larger sod webworm.
- 34T. The fall army worm.
- 41T. The sugar-cane moth borer in the United States.
- 42T. Life history of the codling moth in Delaware.
- 48T. The western cedar pole borer.
- 52T. A classification of the higher groups and genera of the coccid family *Margarodidae*.
- 53T. Scouting, quarantine, and control for the European corn borer, 1917-1926.
- 59T. The European corn borer and its controlling factors in Europe.
- 60T. Ineffectiveness of internal medication of poultry for the control of external parasites.
- 66T. The apple maggot.
- 77T. The host plants of the European corn borer in New England.
- 81T. The Hessian fly in California.
- 83T. The Pacific flathead borer.
- 86T. Imported insect enemies of the gipsy moth and the brown-tail moth.
- 88T. Tobacco cutworms.
- 89T. Biology of the European red mite.
- 90T. Life history of the codling moth in northern Georgia.
- 95T. The mealworms.
- 98T. Imported parasites of the European corn borer in America.
- 111T. Fish oil as an adhesive in lead-arsenate sprays.
- 112T. Biology of the cotton boll weevil at Florence, S. C.
- 130T. The chestnut curculios.
- 135T. The corn borer in central Europe; A review of investigations from 1924 to 1927.
- 137T. The Pandora moth, an enemy of western pine forests.
- 138T. Studies on the fall army worm in the Gulf Coast district of Texas.
- 149T. Fungous diseases of the honeybee.
- 152T. The life history of the oriental peach moth in Georgia.
- 157T. The western grass-stem sawfly, a pest of small grains.
- 161T. Life history, habits, and control of the Mormon cricket.
- 173T. The bluegrass webworm.
- 176T. The citrus rust mite and its control.
- 183T. Life history of the oriental peach moth at Riverton, N.J., in relation to temperature.
- 188T. Life history and habits of the plum curculio in the Georgia peach belt.
- 190T. A study of the lesser migratory grasshopper.
- 195T. Control of the mountain pine beetle in lodgepole pine by the use of solar heat.
- 208T. Ecological studies of the beet leaf hopper.



- 215T. A biological study of *Trichogramma minutum* Riley as an egg parasite of the oriental fruit moth.
- 230T. *Macrocentrus gifuensis* Ashmead, a polyembryonic braconid parasite in the European corn borer.
- 231T. A revision of the American species of *Empoasca* known to occur north of Mexico.
- 233T. *Apanteles thompsoni* Lyle, a braconid parasite of the European corn borer.
- 242T. Biology of the Indian-meal moth on dried fruits in California. (In press.)
- 252T. Two citrus leaf miners of the Far East. (In press.)

#### REPORTS, OFFICE OF THE SECRETARY

(This series has been discontinued. The publications listed below, which are of a technical character, are obtainable from the Bureau of Entomology only.)

- \*99. Classification of the Cryphalinae, with descriptions of new genera and species.
- \*101. The wooly apple aphid.
- \*102. Descriptions of some weevils reared from cotton in Peru.
- \*107. Larvae of the Prioninae.

#### CIRCULARS, OFFICE OF THE SECRETARY

- \*51. The Hessian fly situation in 1915.
- \*55. The spring grain-aphid or "greenbug" in the Southwest and possibilities of an outbreak in 1916.

The three series listed below were discontinued in 1914. Most of them (those marked by an asterisk) are obtainable from the Bureau of Entomology only.

#### ENTOMOLOGY CIRCULARS

- \*101. The apple maggot or "railroad worm."
- \*123. Methods of controlling tobacco insects.
- \*131. How to control the pear thrips.
- 148. Two destructive Texas ants.
- \*Unnumbered. The pink bollworm. 1914.

#### ENTOMOLOGY BULLETINS

- 71. The periodical Cicada.
- \*85. Part III. The clover-root curculio.
- \*95. Part II. The maize billbug.

#### ENTOMOLOGY TECHNICAL SERIES

- \*19. Contents and index.
- \*23. Part I. Some new California and Georgia Thysanoptera.
- \*24. The life history of the alder blight aphid.
- \*25. Part II. The yellow clover aphid.
- \*27. Part II. Classification of the Aleyrodidae.
- \*27. Contents and index.